

## **DOPAMINERGIC NEURONS DIFFERENTIATED FROM EMBRYONIC CELLS FOR TREATING NEURODEGENERATIVE DISEASES**

### **Abstract of the Disclosure**

Disclosed herein are methods for generating dopaminergic neurons *in vitro* by inhibiting a pathway component of a TGF- $\beta$  signaling pathway and overexpressing one or more cell fate-inducing polypeptides in pluripotent cells, causing differentiation of the pluripotent cells into dopaminergic neurons. Also disclosed are methods for treating a neurodegenerative disease in a patient by generating dopaminergic neurons *in vitro*, and transplanting them into the brain of the patient, such that the dopaminergic neurons are sufficient to reduce or eliminate the symptoms of the neurodegenerative disease.